

0590
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RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/905,558C

DATE: 07/10/2002 Pib

TIME: 13:06:39

Input Set : A:\1016.SEQLIST.TXT

Output Set: N:\CRF3\07102002\I905558C.raw

4 <110> APPLICANT: Garnaat, Carl W.
5 Lowe, Keith S.
6 Roth, Bradley A.
8 <120> TITLE OF INVENTION: ZmAxigl Polynucleotides and Methods of
9 Use
11 <130> FILE REFERENCE: 1016
13 <140> CURRENT APPLICATION NUMBER: US 09/905,558C
C--> 14 <141> CURRENT FILING DATE: 2002-06-24
16 <150> PRIOR APPLICATION NUMBER: US 60/217,942
17 <151> PRIOR FILING DATE: 2000-07-13
19 <160> NUMBER OF SEQ ID NOS: 21
21 <170> SOFTWARE: FastSEQ for Windows Version 3.0
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24 <211> LENGTH: 1271
25 <212> TYPE: DNA
26 <213> ORGANISM: Zea mays
28 <220> FEATURE:
29 <221> NAME/KEY: CDS
30 <222> LOCATION: (170)...(763)
32 <400> SEQUENCE: 1
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35 acgcacatga ccgcagtgcg cgcgggggctg atcaagggaa agtgatcgg atg gag ctg 178
36 Met Glu Leu
37 1
39 gag ctc ggg ctc gcg ccg ccg aac ccg cat cag ccg ctg gct gcc gcc 226
40 Glu Leu Gly Leu Ala Pro Pro Asn Pro His Gln Pro Leu Ala Ala Ala
41 5 10 15
43 gcc gag ttc gtc ggt ctc ctc agc agc tcg gct ggc tcg tgc ggg aac 274
44 Ala Glu Phe Val Gly Leu Leu Ser Ser Ser Ala Gly Ser Cys Gly Asn
45 20 25 30 35
47 aag agg gtt ctc ggc gac gcg ttc ggg gcc gcc aag gcg gcc acg ctt 322
48 Lys Arg Val Leu Gly Asp Ala Phe Gly Ala Ala Lys Ala Ala Thr Leu
49 40 45 50
51 ccg ctc ttc gtc tgc gag gat ggc gac gga ggc ggc ggc gac cgc gac 370
52 Pro Leu Phe Val Cys Glu Asp Gly Asp Gly Gly Gly Gly Asp Arg Asp
53 55 60 65
55 cgc gac ggc gtc gtc gac cat gaa cag caa agc aac aat gta ccc agg 418
56 Arg Asp Gly Val Val Asp His Glu Gln Gln Ser Asn Asn Val Pro Arg
57 70 75 80
59 aag aag agg ctg gtg ggg tgg ccg ccg gtg aag tgc gcg cgt agg cgt 466
60 Lys Lys Arg Leu Val Gly Trp Pro Pro Val Lys Cys Ala Arg Arg Arg
61 85 90 95

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63  agc tgc ggc ggc ggg tac gtg aag gtg aag ctg gaa ggg gtg ccc atc      514
64  Ser Cys Gly Gly Gly Tyr Val Lys Val Lys Leu Glu Gly Val Pro Ile
65  100                               105                               110                               115
67  ggg cgg aag gtg gac gtg tcc atc cac ggc tgc tac cag gag ctg ctc      562
68  Gly Arg Lys Val Asp Val Ser Ile His Gly Ser Tyr Gln Glu Leu Leu
69                               120                               125                               130
71  cgc acg ctc gag agc atg ttc cct tgc ggt aac caa caa gat cat gca      610
72  Arg Thr Leu Glu Ser Met Phe Pro Ser Gly Asn Gln Gln Asp His Ala
73                               135                               140                               145
75  gaa gac gag gtg gtg gtc tgc cac gag cgc cgc cgt cgc cat cct tat      658
76  Glu Asp Glu Val Val Val Ser His Glu Arg Arg Arg Arg His Pro Tyr
77                               150                               155                               160
79  gta gtc acc tac gag gac ggc gaa ggg gac tgg ttg ctc gtc gga gat      706
80  Val Val Thr Tyr Glu Asp Gly Glu Gly Asp Trp Leu Leu Val Gly Asp
81                               165                               170                               175
83  gat gtg ccg tgg gag gtc ttt gtc aag tca gtg aag cgg ctc aag ata      754
84  Asp Val Pro Trp Glu Val Phe Val Lys Ser Val Lys Arg Leu Lys Ile
85  180                               185                               190                               195
87  ctt gcg tag ccgacggctcg gcgcctcaga gacgtcgtgt ggtccgtctc      803
88  Leu Ala *
91  accaggatcg gagcagtgtg gtactcctgg gcgtcatctg cgtaataacg ttgtttctgt      863
92  cctgtgtgcc cgtagcagta cgtaactgtcc tataagtaagc tagctttatg gggtgcttca      923
93  gctttcagag catgacgaaa gcaactgatta gctgctgtca tcacatttgg ttcgtctttg      983
94  tgctgtacgg tatcgctggc gtcagtgtcg cggcagccta ggtgatctaa gcatacttac      1043
95  tatctcaagt tacttttggg ttcctgagct tgcattgtaa ttcataatacc gtatacgtgt      1103
96  gtgactcagg ggcgaagctg ccttaaggca caggggtcac cggaccgat ggaatttatc      1163
97  aaatccagtg taaaatacta ttttaactg ttcataata tatttgattt caataaaaaa      1223
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101 <211> LENGTH: 197
102 <212> TYPE: PRT
103 <213> ORGANISM: Zea mays
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108 Ala Ala Ala Ala Glu Phe Val Gly Leu Leu Ser Ser Ser Ala Gly Ser
109 20 25 30
110 Cys Gly Asn Lys Arg Val Leu Gly Asp Ala Phe Gly Ala Ala Lys Ala
111 35 40 45
112 Ala Thr Leu Pro Leu Phe Val Cys Glu Asp Gly Asp Gly Gly Gly Gly
113 50 55 60
114 Asp Arg Asp Arg Asp Gly Val Val Asp His Glu Gln Gln Ser Asn Asn
115 65 70 75 80
116 Val Pro Arg Lys Lys Arg Leu Val Gly Trp Pro Pro Val Lys Cys Ala
117 85 90 95
118 Arg Arg Arg Ser Cys Gly Gly Gly Tyr Val Lys Val Lys Leu Glu Gly
119 100 105 110
120 Val Pro Ile Gly Arg Lys Val Asp Val Ser Ile His Gly Ser Tyr Gln
121 115 120 125

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123      130                      135                      140
124  Asp His Ala Glu Asp Glu Val Val Val Ser His Glu Arg Arg Arg Arg
125      145                      150                      155                      160
126  His Pro Tyr Val Val Thr Tyr Glu Asp Gly Glu Gly Asp Trp Leu Leu
127      165                      170                      175
128  Val Gly Asp Asp Val Pro Trp Glu Val Phe Val Lys Ser Val Lys Arg
129      180                      185                      190
130  Leu Lys Ile Leu Ala
131      195
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134 <211> LENGTH: 1310
135 <212> TYPE: DNA
136 <213> ORGANISM: Zea mays
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140  tgttcttatt cagactaccg ttcgagtgac tgcattggcg acatctttct gcatcgactt      120
141  tgtacggcta catcgaacat atacacgaga tgtctcgtgt gaatagagtc actaatgcct      180
142  taagcatcgg ttactccgta gggtagattc tgtttcttct atttgtgcat atttttattg      240
143  ttgtttactg attatacgag tagttataca tacatgcaca tacatatcat cacatatatc      300
144  acaatatatt tctaaattaa attaaaacta aaaatgacta aatttctaac accaacgaca      360
145  ttgtaatggt ttctccaaca actttaccta ttctacattg ttctatttcg aatttcactc      420
146  tataaacaac atagtctaca atggaaaaca gtgctttgta cgactatata cgcgatgtgt      480
147  ggctacaaca taagacaata tagtcgtttg aagattgaac ctatatatcg gtacgggtta      540
148  tccgtctatg tacgtgggca tgacgaacac ccgtgataac gaaggattaa cgtgcacaat      600
149  cataaatcca aagtaggagc ggtgcatgat gagaatcgct ctcagtactc gacataatga      660
150  accttacgag gtacaacagg caggcaggca gggaccaggg gccgccttta ttccaggctc      720
151  gctggcccca cgggcgtgct gcgtgcacga agggcactac cccaacctct caccgaaaaa      780
152  ccgcgctgga tcggcaaata aaacgaggtg gtgccccgtg cccactctcc acgtccaacg      840
153  caccatccct ctgcagccgc tcaccagcca tgccgtgtcg cggaaacggc caaccacccc      900
154  caaccactc acgaaacccc gtcccggcgc tgcccgtgtc ggtccgcgct cggcaacgag      960
155  gcggcccgcg ctgctgagtc ccctggacac ccgacaccct gtcggccctt tgtttattca      1020
156  tcccgaaatc tcatctgccc ccacggccga ctgctgctgc ccgcccggat atatataccc      1080
157  atcgttatcg atcgatcgat cgcgtcactc acgggtagct catggtcgag cgtagcatgc      1140
158  aggaacttat ttgccgtgcg ctcccaggtc tccgctcgcg tgccttccag tctgtctcac      1200
159  actagctgct gtgggacgat cgaagtgggt gtgtcagcta gctagctgcg ccgtgaccac      1260
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164 <212> TYPE: DNA
165 <213> ORGANISM: Zea mays
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170  tgtacggcta catcgaacat atacacgaga tgtctcgtgt gaatagagtc actaatgcct      180
171  taagcatcgg ttactccgta gggtagattc tgtttcttct atttgtgcat atttttattg      240
172  ttgtttactg attatacgag tagttataca tacatgcaca tacatatcat cacatatatc      300
173  acaatatatt tctaaattaa attaaaacta aaaatgacta aatttctaac accaacgaca      360
174  ttgtaatggt ttctccaaca actttaccta ttctacattg ttctatttcg aatttcactc      420

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176	ggctacaaca	taagacaata	tagtcgtttg	aagattgaac	ctatatatcg	gtacggttaa	540
177	tccgtctatg	tacgtgggca	tgacgaacac	ccgtgataac	gaaggattaa	cgtgcacaat	600
178	cataaatcca	aagtaggagc	ggtgcatgat	gagaatcgct	ctcagtactc	gacataatga	660
179	accttacgag	gtacaacagg	caggcaggca	gggaccaggg	gccgccttta	tttcaggctc	720
180	gctggcccca	cggcgctgct	gcgtgcacga	agggcactac	cccaacctct	caccgaaaaa	780
181	ccgcgctgga	tcggcaaate	aaacgagggt	gtgccccgtg	cccactctcc	acgtccacgg	840
182	caccatccct	ctgcagccgc	tcaccagcca	tgccgtgtcg	cggaaacggca	caaccacccc	900
183	caaccactc	acgaaacccc	gtcccggccg	tgcccggtgc	ggtccgcgct	cggcaacgag	960
184	gcggcccgcg	ctgctgagtc	ccctggacac	ccgacaccct	gtcggccctt	tgtttattca	1020
185	tcgccaaatc	tcactctgcc	ccacggccga	ctgcgctgcg	ccgcccgat	atatataccc	1080
186	atcgttatcg	atcgatcgat	cgcgtcactc	acgggtagct	catggtcgag	cgtagcatgc	1140
187	aggaacttat	ttgccgtgcg	ctcccaggtc	tccgctcgcg	tgccctccag	tctgtctcac	1200
188	actagctgct	gtgggacgat	cgaagtgggt	gtgtcagcta	gctagctgcg	ccgtgaccac	1260
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194	<213> ORGANISM: Zea mays						
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199	tgtacggcta	catcgaacat	atacacgaga	tgtctcgtgt	gaatagagtc	actaatgcct	180
200	taagcatcgg	ttactccgta	gggtacattc	tgttcttctt	atttgtgcat	atttttattg	240
201	ttgtttactg	attatacgag	tagttataca	tacatgcaca	tacatatcat	cacataatc	300
202	acaatatatt	tctaaattaa	attaaaacta	aaaatgacta	aatttctaac	accaacgaca	360
203	ttgtaatggt	ttctccaaca	actttaccta	ttctacattg	ttctatttcg	aatttcaact	420
204	tataaacaac	atagtctaca	atggaaaaca	gtgctttgta	cgactatata	cgcgatgtgt	480
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207	cataaatcca	aagtaggagc	ggtgcatgat	gagaatcgct	ctcagtactc	gacataatga	660
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210	ccgcgctgga	tcggcaaate	aaacgagggt	gtgccccgtg	cccactctcc	acgtccacgg	840
211	caccatccct	ctgcagccgc	tcaccagcca	tgccgtgtcg	cggaaacggca	caaccacccc	900
212	caaccactc	acgaaacccc	gtcccggccg	tgcccggtgc	ggtccgcgct	cggcaacgag	960
213	gcggcccgcg	ctgctgagtc	ccctggacac	ccgacaccct	gtcggccctt	tgtttattca	1020
214	tcgccaaatc	tcactctgcc	ccacggccga	ctgcgctgcg	ccgcccgat	atatataccc	1080
215	atcgttatcg	atcgatcgat	cgcgtcactc	acgggtagct	catggtcgag	cgtagcatgc	1140
216	aggaacttat	ttgccgtgcg	ctcccaggtc	tccgctcgcg	tgccctccag	tctgtctcac	1200
217	actagctgct	gtgggacgat	cgaagtgggt	gtgtcagcta	gctagctgcg	ccgtgaccac	1260
218	gcacatgacc	gcagtgcgcg	cggggctgat	caagggaaag	tgatcggatg	gagctggagc	1320
219	tcgggctcgc	gccgccgaac	ccgcatcagc	cgttggtgcg	cgccgccgag	ttcgtcgggc	1380
220	tcctcagcag	ctcggctggc	tcgtgcggga	acaagagggt	tctcggcgac	gcgttcgggg	1440
221	ccgccaaagg	ggccacgctt	ccgctcttcg	tctgcgagga	tggcgacgga	ggcggcggcg	1500
222	accgcgaccg	cgacggcgtc	gtcgaccatg	aacagcaaag	caacaagtga	gttgtggtta	1560
223	aaaataccga	ccacgtgcgt	acagggaggg	tcttattata	cccaaattccg	atccgtgggtg	1620
224	tgtgtagtgt	accaggaag	aagaggctgg	tggggtgccc	gccgggtgaag	tgcgcgcgta	1680
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228 cggcggtgct gcggacgatg cctttctttc actgataatc atctgccgcc atcgttcttg 1920
229 tcccgcacag tgcccttgct tcccgttctg ctcccggcac ttaacttggt cgcataact 1980
230 attcctgtaa cctctggcag atcatgcaga agacgaggtg gtggtctcgc acgagcgccg 2040
231 ccgtcgccat ccttatgtag tcacctacga ggacggcgaa ggggactggt tgctcgtcgg 2100
232 agatgatgtg ccgtgggagt acgtatcagt cactactact gtcgtctgta tgactgtatc 2160
233 gatggtgacg gcaacaatat aatccaatta attattcagc gaacttaaaa acgacgttga 2220
234 tttccttgca gggcttttgt caagtcagtg aagcggtcga agatacttgc gtagccgacg 2280
235 gtcggcgccct cagagacgtc gtgtggtccg tctcaccagg atcggagcag tgtagtactc 2340
236 ctgggctgca tctgcgtaat aacgttggtt ctgtcctgtg tgcccgtagc agtacgtact 2400
237 gtcctatagt aagctagctt tatggggtgc ttacgctttc agagcatgac gaaagcactg 2460
238 attagctgct gtcacacat ttggttcgtc tttgtgtcgt acggtatcgc tggcgtcagt 2520
239 gtcgcggcag cctaggtgat ctaagcatac ttactatctc aagttacttt tggtttcctg 2580
240 agcttgcatg gtaattcata taccgtatac gtgtgtgact caggggcgaa gctgccttaa 2640
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243 ctgtcttcgc ctctggtgtg actagtattt tggtttgact tttcactctg tataagatat 2820
244 atattataacc agcgagttaa tcgactgcta gttttacaag aggcttaact ctttcaattg 2880
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246 gtaaatgtca ttataggata taaatgtagt gtttcctagt tttaccctag ctttcgcatg 3000
247 catagtggga aagtgtacta actctcctca tgcagaaaga ggtgtggtat acctaacaaa 3060
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260 <211> LENGTH: 28
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262 <213> ORGANISM: Artificial Sequence
264 <220> FEATURE:
265 <223> OTHER INFORMATION: Zea mays
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270 <210> SEQ ID NO: 8
271 <211> LENGTH: 29
272 <212> TYPE: DNA
273 <213> ORGANISM: Zea mays
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RAW SEQUENCE LISTING ERROR SUMMARY DATE: 07/10/2002
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Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:20; N Pos. 236,242,257,276,420,457,463,470,486,508,540,554,580,586,596
Seq#:21; Xaa Pos. 5,6,18,19,22,33,45,47,51,54,55,56,57,61,62,63,65

VERIFICATION SUMMARY

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L:14 M:271 C: Current Filing Date differs, Replaced Current Filing Date
L:461 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:20 after pos.:180
L:462 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:20 after pos.:240
L:464 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:20 after pos.:360
L:465 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:20 after pos.:420
L:466 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:20 after pos.:480
L:467 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:20 after pos.:540
L:481 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:21 after pos.:0
L:483 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:21 after pos.:16
L:485 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:21 after pos.:32
L:487 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:21 after pos.:48
L:489 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:21 after pos.:64